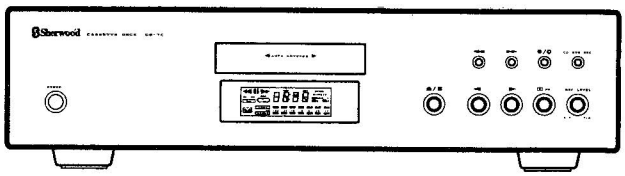
OPERATING INSTRUCTIONS



DS-7C

Stereo Cassette Deck

Sherwood

Unpacking and Installation

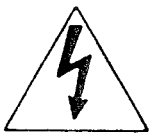
Congratulations on Your Purchase!

Your new high fidelity Cassette Deck is designed to deliver maximum enjoyment and years of trouble free service.
Please take a few moments to read this manual thoroughly. It will explain the features and operation of your Cassette Deck and help a trouble free installation.
Please unpack your Cassette Deck carefully. We recommend that you save the carton and packing material. They will be helpful if you ever need to move your unit and may be required if you ever need to return it for service. Your Cassette Deck is designed to be placed in a horizontal position and it is important to allow at least two inches of space behind your unit for adequate ventilation and cabling convenience.
To avoid early damage, never place the unit near radiators, in front of heating vents, in direct sun light, or in excessively humid or dusty location.
Connect your complementary components as illustrated in the following section

CAUTION

RISK OF ELECTRIC SHOCK.
DO NOT OPEN.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Caution:To prevent electric shock do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Read this Before Operating Your Unit

FOR THE U.S.A AND CANADA ..... 120 V

FOR YOUR SAFETY

Units shipped to the U.S.A and Canada are designed for operation on 120 V AC only.

Safety precaution for a polarized AC plug.
However, some products may be supplied with a non-polarized plug.

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

FOR THE UNITED KINGDOM ..... 240 V

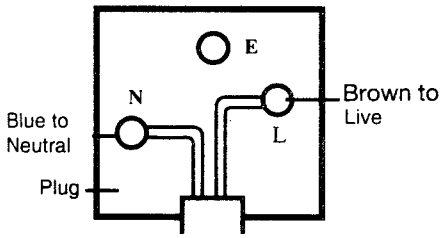
FOR YOUR SAFETY

PAN-EUROPEAN UNIFIED VOLTAGE
All units are suitable for use on supplies 220~240 V AC.

- The mains plug must be removed from the wall socket prior to any internal examination.

The wires in this mains lead are coloured in accordance with the following code:
Blue. . . . . Neutral
Brown. . . . . Live

The wires in this mains lead must be connected to the terminals in the plug as follows:
Wire colour
Blue. . . . . .N or Black
Brown. . . . . .L or Red



NOTES:
1. If a 13-amp plug is used, this must be fitted with a 3-amp fuse
2. If a 3-pin plug with earthing contact is used, no wire must be connected to the E terminal

"FOR ADDED SAFETY, WHEN CONNECTING THE AC MAINS LEAD TO A 3 PIN PLUG PLEASE USE A 5A FUSE APPROVED BY ASTA TO BS1362, I.E. CARRIES THE ASA MARK."

FOR AUSTRALIA AND EUROPE ..... 220 V/230 V/240 V

FOR YOUR SAFETY

Units shipped to Australia are designed for operation on 240 V AC only.
To ensure safe operation the three-pin plug supplied must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring. Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities. The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of the power point, consult a qualified electrician.
PAN-EUROPEAN UNIFIED VOLTAGE
All units are suitable for use on supplies 220~240 V AC.

FOR OTHER COUNTRIES ... 120 V/220 V

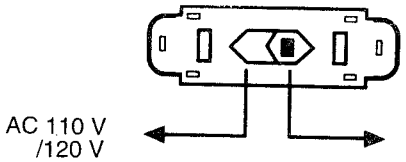
FOR YOUR SAFETY

Units shipped to countries other than the above countries are equipped with an AC voltage selector switch on the rear panel. Refer to the following paragraph for the proper setting of this switch.

AC VOLTAGE SELECTION
This unit operates on 110-120 V AC. The AC voltage selector switch Type A on the rear panel is set to the voltage that prevails in the area to which the unit is shipped. Before connecting the power cord to your AC outlet, make sure that the setting position of this switch matches your line voltage. If not, it must be set to your voltage in accordance with the following direction

AC voltage selector switch

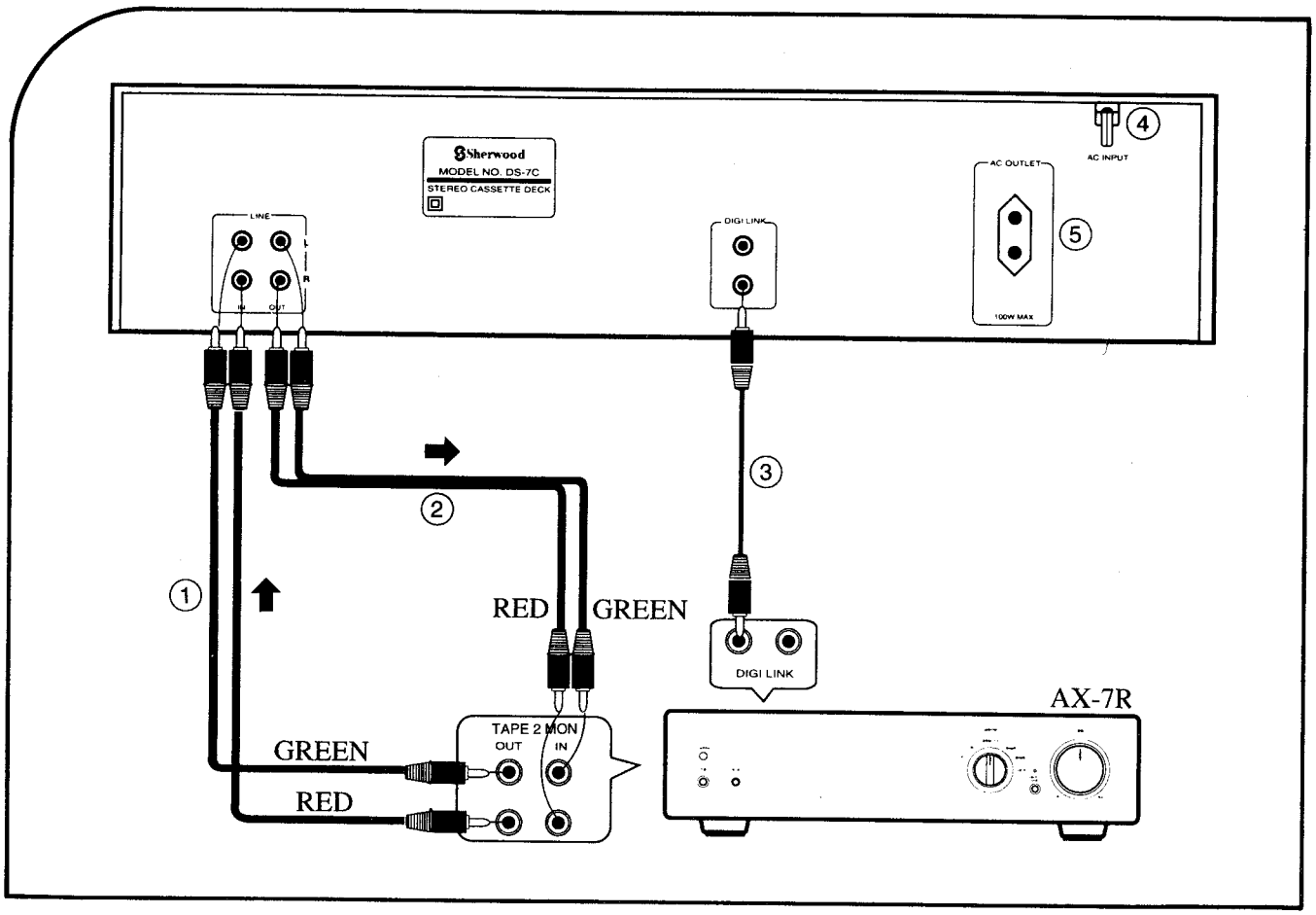
Type A



Move switch lever to match your line voltage with a small screwdriver or other pointed tool

Rear Panel Connections

※ Do not plug the AC input cord into the AC outlet when plugging and unplugging connection cords.
※ Be sure to connect the green plugs to the white (left) jacks and the red plugs to the red(right) jacks when making connections with the supplied cords.
※ For better sound, the signals should flow in the direction of arrowhead on the supplied cords. So, be sure to connect the plugs in the direction of arrowhead to the INPUT jacks.
※ Refer to the connecting diagram in the operating instructions of Sherwood compatible amplifier such as AX-7R for details.



① LINE INPUT JACKS
Connect the cords between the LINE INPUT jacks of this unit and the TAPE OUTPUT(REC) jacks of your amplifier.

② LINE OUTPUT JACKS
Connect the cords between the LINE OUTPUT jacks of this unit and the TAPE INPUT(PLAY) jacks of your amplifier.

③ DIGI LINK JACK
Connect this jack to the DIGI LINK jack of Sherwood component such as AX-7R, TX-7C or CD-7C/R to control this unit remotely by DIGI LINK system.

④ AC INPUT CORD

Plug this cord into the switched AC outlet of amplifier or a household AC outlet.

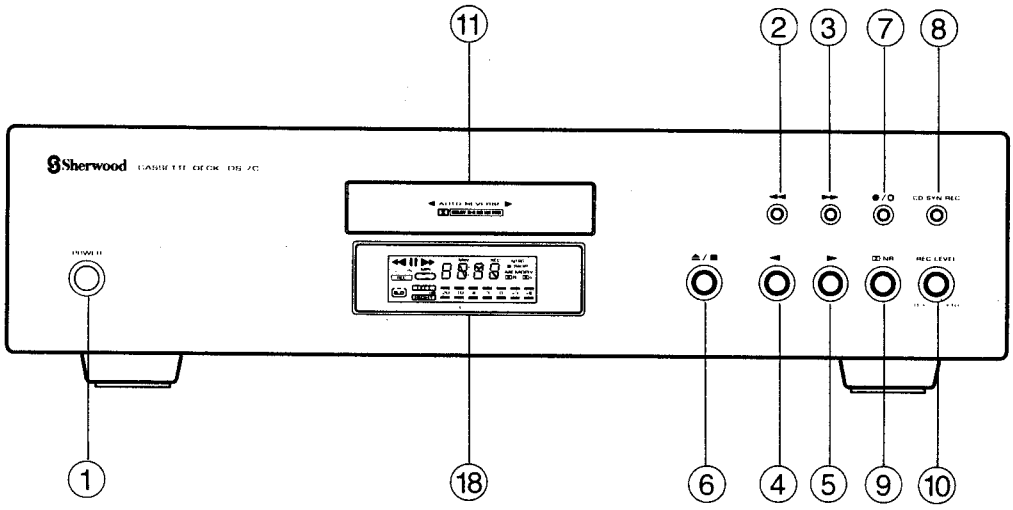
⑤ UNSWITCHED AC OUTLET

Power always flows to this outlet, regardless of whether this unit is switched ON or OFF if power flows through the AC input cord of this unit.

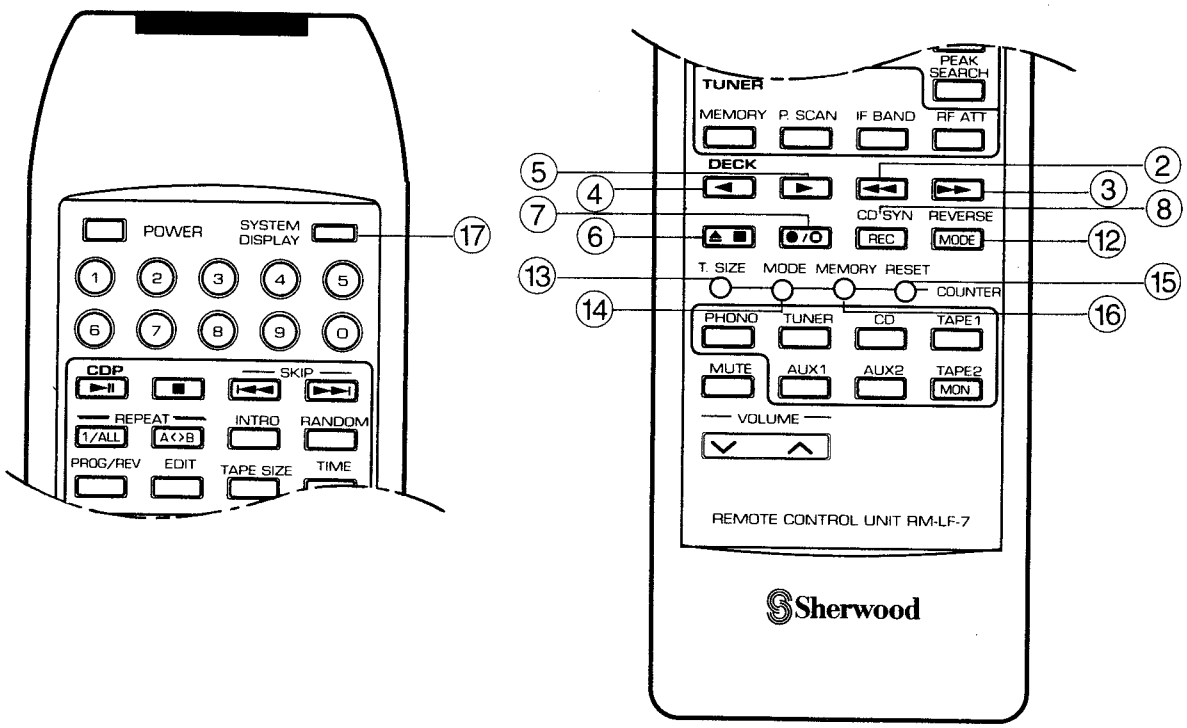
NOTE: The equipment whose power consumption exceeds 100 watts should not be connected.

Front Panel & System Remote Controls

FRONT PANEL CONTROLS



SYSTEM REMOTE CONTROLS



SYSTEM REMOTE CONTROL UNIT (only for AX-7R)

① POWER BUTTON
Press this button to turn the power on and press again to turn the power off.

②③ REWIND and FAST FORWARD BUTTONS (◀◀ and ▶▶)
Press the button to rewind or advance the tape rapidly.

④ REVERSE PLAY BUTTON (◀)
Press this button to play back the reverse side of the tape.

⑤ FORWARD PLAY BUTTON (▶)
Press this button to play back the forward side of the tape.

⑥ OPEN/CLOSE/STOP BUTTON (▲ / ■)
Press this button to open or close the cassette tray or stop the tape.

⑦ RECORD/RECORD MUTING BUTTON (●/○)
Press this button to start recording or to make a 4 second blank space between the programs for automatic music search, etc.

⑧ CD SYNCRO RECORD BUTTON
Press this button to record a CD automatically.

⑨ DOLBY NR BUTTON
Press this button to select the Dolby B type or C type NR system when playing back or recording.

⑩ RECORDING LEVEL CONTROL
Use this control to adjust the recording level.

⑪ CASSETTE TRAY
Load a cassette tape with its exposed tape backwards.

⑫ REVERSE MODE BUTTON
Press this button to select the desired reverse mode when playing back or recording.

⑬ TAPE SIZE BUTTON
Press this button to select the tape length for displaying the elapsed time when playing back or recording.

⑭ COUNTER MODE BUTTON
Press this button to select the tape or time counter mode.

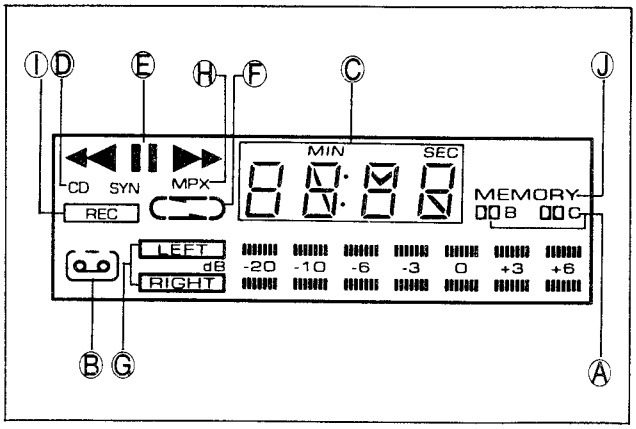
⑮ COUNTER RESET BUTTON
Press this button to reset the counter to "0000" or "00 min. 00 sec.".

⑯ MEMORY BUTTON
Press this button to memorize the specific point on the tape.

⑰ SYSTEM DISPLAY BUTTON
Each time this button is pressed, the brightness of the display changes as follows.

→ ON → dim → dimmer →

⑱ FLUORESCENT DISPLAY



Ⓐ DOLBY NR INDICATORS
Ⓑ TAPE DETECTION INDICATOR
Ⓒ TAPE/TIME COUNTER DISPLAY
Ⓓ CD SYNCRO RECORD INDICATOR
Ⓔ TAPE TRANSPORT INDICATORS
Ⓕ REVERSE MODE INDICATORS
Ⓖ LEVEL METER DISPLAY
Ⓗ MPX FILTER INDICATOR
Ⓘ RECORD INDICATOR
Ⓙ MEMORY INDICATOR

Operations

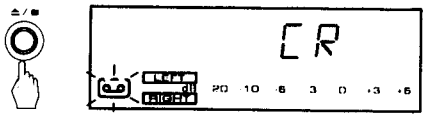
■ AUTO TAPE SELECTOR

The type of tape loaded is detected automatically by the auto tape selector and recording bias and equalization are set automatically according to the characteristic of that tape such as normal, chrome or metal tape.

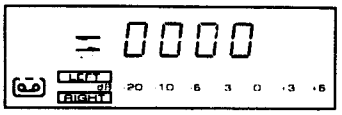
■ PLAYING BACK TAPES

① Press the POWER button to turn the power on.

② Load a tape.



• The type of the tape loaded is displayed.



• According to the type of the tape loaded, the corresponding type of the tape is displayed as follows.

Normal tape : "NOR" is displayed.
Chrome tape : "CR" is displayed.
Metal tape : "ME" is displayed.

③ On the remote control unit, select the desired reverse mode.

• Each time this button is pressed, the reverse mode changes as follows.

: Playback of a single side.
: Playback of both sides.
: Repeat playback of both sides.

④ In case of the tape recorded with Dolby NR system, select the corresponding Dolby NR system.

• Each time this button is pressed, the Dolby NR system changes as follows.

→ DOLBY B → DOLBY C → OFF

• On the commercial cassette tapes, if Dolby NR or DD appears but Dolby C is not specified, the tapes are recorded with the Dolby B NR.

⑤ Start playback.

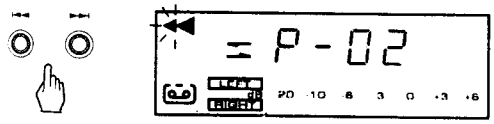
⑥ To stop playback.

• At the end of the tape, according to the reverse mode, the playback of the next side starts or the playback of the current side stops automatically.

■ SEARCHING MUSIC PROGRAM AUTOMATICALLY

- The automatic music search function automatically skips other programs, finds and starts playback from the desired program.
  Up to 20th program before or after the present program can be searched quickly.
- During playback, press the button the desired number of times.

Example : When listening to the second program before or after the present program.



- The second program can be searched quickly and played back.
- During the automatic music search, if the PLAY button is pressed, the unit stops searching the desired program and starts playback from the present point.

*** Automatic music search function might not operate as expected if:**

- The length of the blank space between the program is less than 4 seconds.
- The noise level of the blank space is very high.
- The overall recorded volume level of a program is very low.

■ RECORDING

① Load a tape to be recorded.

- Be sure the erase-protection taps on the cassette tapes are in place.

② On the remote control unit, select the reverse mode.

: Recording of a single side.

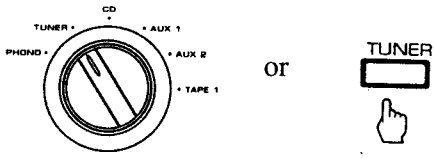
: Recording of both sides.

- When selecting recording of both sides and recording first on the reverse side, recording is made only on that side.

③ When recording with the Dolby NR system, select the desired Dolby NR system.

- When selecting the Dolby NR system, the MPX FILTER indicator lights up and the MPX filter is activated to suppress the high frequency signals adequately.

④ Select the program source to be recorded.
Example : When selecting the tuner.



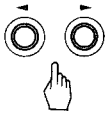
⑤ Press the RECORD/RECORD MUTING button to enter the recording pause mode.

: Recordable on both sides.
: Recordable on forward side.
: Recordable on reverse side.

⑥ Push the RECORDING LEVEL control and pull it out and adjust the recording level.

- Listen to the program source and adjust the recording level referring to the "RECORDING LEVEL ADJUSTMENT".

⑦ Press the PLAY button to start recording.

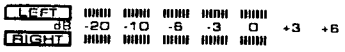


⑧ To stop recording.

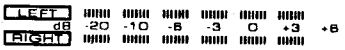
ENGLISH

■ RECORDING LEVEL ADJUSTMENT

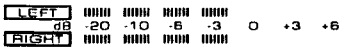
- The most important factor for good recording results is the recording level adjustment. If the recording level is set at maximum, the signal-to-noise ratio (S/N) and the dynamic range(range of sound volume) will improve, but if it is set too high, the sound quality will deteriorate. On the contrary when the recording level is set too low in order to avoid distortion, tape hiss noise becomes too evident. Even among tapes of the same type, the tape characteristics may differ according to maker and kind. It is therefore important to determine the optimum recording level for each tape used, in order to obtain good recordings by. fully utilizing the tape characteristics.
- The optimum recording level depends on the type of music to be recorded and also on the type of tape used.
  To obtain better recordings that make the most of the tape characteristics, judge the playback sound quality by actually listening to your recording.
- Generally, adjust the recording level so that the level meters indicate around the 0 dB point for normal or chrome tapes or the +3dB point for metal tapes at the highest signal level.



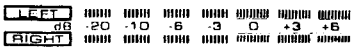
- Proper setting for normal or chrome tapes.



- Proper setting for metal tapes.



- Too low setting, too noise.



- Too high setting, distorted sound.

■ MAKING A BLANK SPACE

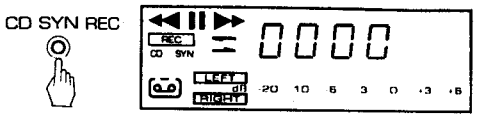
- In the recording pause mode, press the RECORD/RECORD MUTING button again.

- The unit will make a 4 second blank space, then enter the recording pause mode.
- To make a blank space more than 4 seconds long, hold the button down for the desired time.
  The unit will enter the recording pause mode when you release the button.

■ RECORDING A CD AUTOMATICALLY

- When this unit is connected to Sherwood compatible CD player such as CD-7C/R controlled remotely by DIGI LINK system, the CD syncro record function can be operated.

① Repeat steps 1, 3, 4, 5 and 6 of "RECORDING" procedure.
② According to the tape length, edit the tracks to be recorded on the CD player such as CD-7C/R reffering to the CD players operating instructions.
③ Start CD syncro recording.



- The CD is selected automatically on the amplifier AX-7R
- If 8 seconds elapses after starting recording on this unit, the CD player starts play automatically.

NOTES:

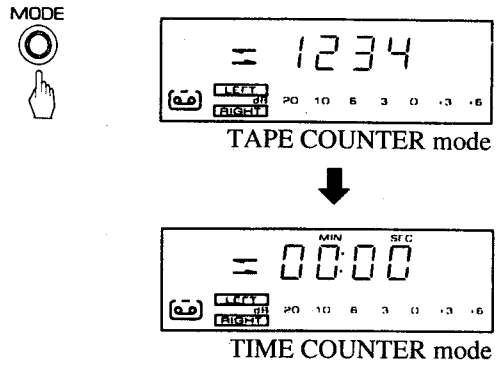
- Only when the erase protection taps on the cassette tapes are in place, CD syncro record function will be operated.
- Regardless of the reverse mode, CD syncro recording is performed on the forward side and reverse side of the tape in sequence.
- During CD syncro recording, if other program source on the amplifier AX-7R is selected, the unit stops CD syncro record and starts recording the selected program source.

Operating the counter with the remote control unit

■ SELECTING A COUNTER MODE

There are two kinds of counter mode: normal tape counter, time counter for displaying the elapsed recording or playback time.

- Select the desired counter mode.
  Example : When selecting the time counter.

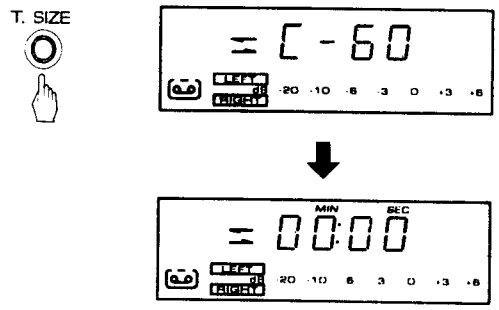


- Each time this button is pressed, the counter mode changes as follows.

→TAPE COUNTER→TIME COUNTER→

■ SELECTING A TAPE LENGTH

- In the time counter mode, select the corresponding tape length according to the loaded tape.
  Example: In case of 60 minute tape.



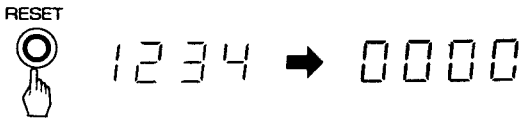
- Each time this button is pressed, the tape length changes as follows.

→ C-60 → C-90 → C120→

- During playback or recording, the elapsed recording or playback time are displayed.
- The time counter is not actually a clock, so that the displayed time is not exactly equal to the actual elapsed time.

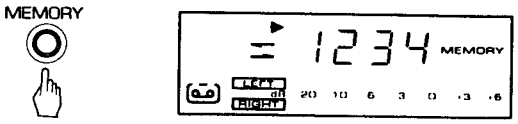
■ RESETTING TO "0000" or "00 min. 00 sec."

- In each counter mode, press the COUNTER RESET button to reset to "0000" or "00 min 00 sec.".
  Example: In the tape counter mode.



■ MEMORIZING THE SPECIFIC POINT

At the desired point on the tape, press the MEMORY button to memorize.

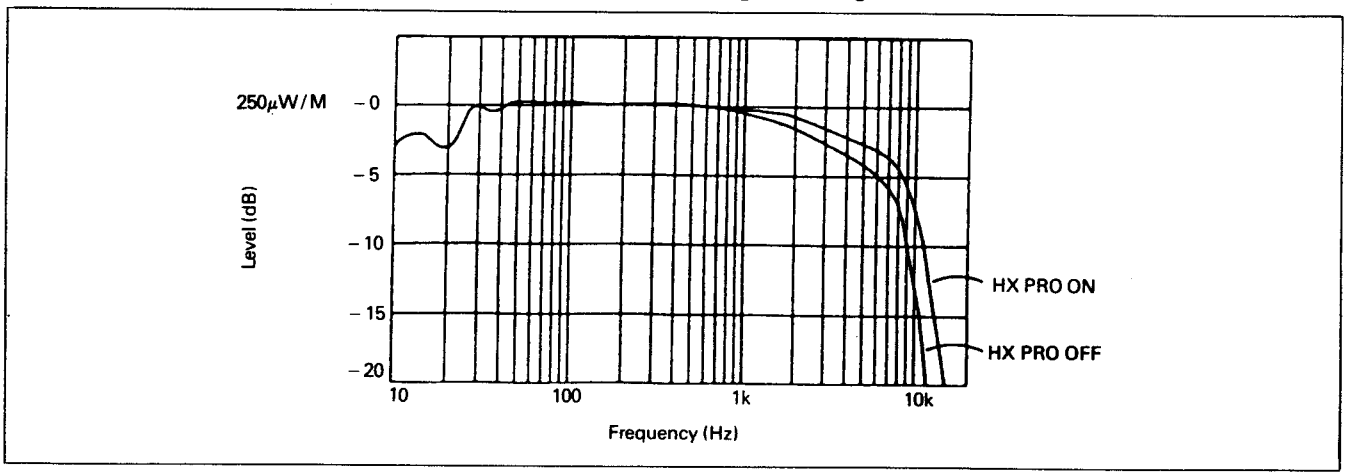


- The unit will automatically stop at the desired point after rewinding or advancing the tape rapidly.
- Press again to cancel.

ENGLISH

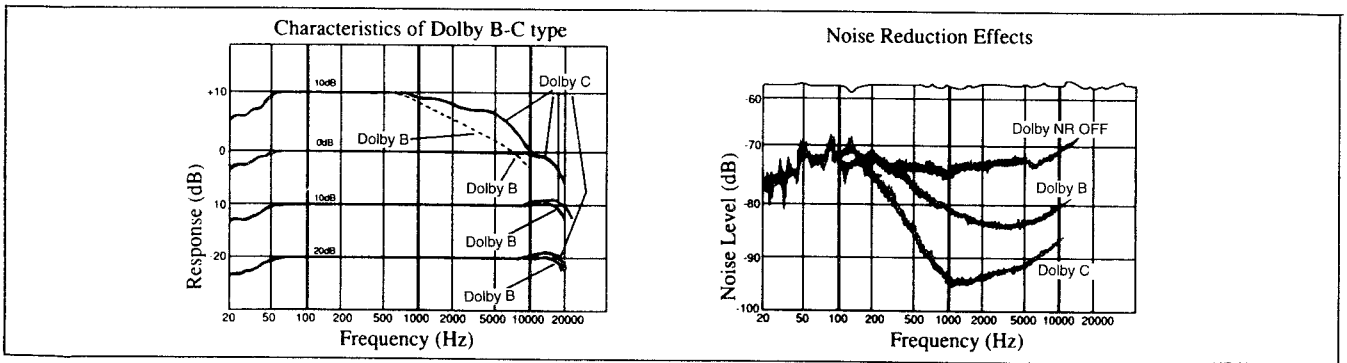
■ DOLBY HX PROFESSIONAL HEAD ROOM EXTENSION (DOLBY HX PRO)

1. Dolby HX PRO is professional recording bias system which are now available in some of home cassette recorders improving dynamic range and signal clarity for life-like sound quality.
   When recording audio signals which contain high-frequency components, these components influence the bias and decrease the high recording frequencies. (If the amount of bias is great, high frequencies are decreased, while on the other hand, if the amount of bias is small, high frequencies are increased, resulting in a corresponding increase in distortion.)
   The Dolby HX Pro system responds to high or low frequencies to regulate the oscillation of the bias level added to the recording head, thus providing a stable, effective bias to the audio signals being recorded.
   When an audio signal contains a large number of high-frequency components, the bias is held to a low value and deterioration of high frequencies is avoided, where as for low frequencies, the bias is added at a fixed rate. Bias is thus added at the optimum rate for both high and low frequencies.
2. The unit incorporates the Dolby HX Pro system which automatically adjusts itself not only for normal, CrO_2, and metal position tapes but also for right and left channels independently. Since the system is automatically engaged during the recording process only, the audiophile can enjoy the full benefits of any tape without worrying about proper adjustment of switches and encoding/decoding controls.



■ PRINCIPLE OF DOLBY NR SYSTEM

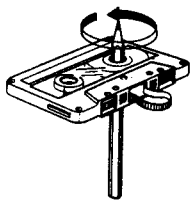
The Dolby NR system functions so that it automatically increases recording levels of medium and high frequencies when the recording signal level is lower than the specified level (encoding), and automatically reduces the output level to the normal level during playback (decoding). In this way, the tape hiss noise is remarkably reduced without affecting the sound quality. The Dolby NR system used in your cassette deck improves S/N ratio by about 5 dB at 1 KHz and about 10 dB at 10 KHz in B-type and by about 20 dB on the most frequency range in C-type. Furthermore C-type has the anti-saturation network which reduces the affects of high frequency saturation, improving high range frequency response.



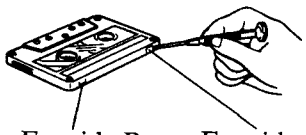
- Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang and Olufsen.
- "Dolby", the double-D symbol, and "HX Pro" are trademarks of Dolby Laboratories Licensing Corporation.

■ NOTES ON CASSETTE TAPE

- Before loading a cassette tape, take up the slack in the tape to prevent if from becoming entangled around the capstan.

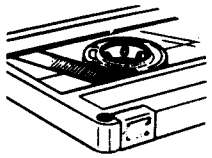


- After the recording has been finished, remove the tab to prevent the recorded contents from being erased or recorded on accidently.



For side B For side A

- To rerecorded after tabs have been removed, cover with adhesive tape.



- Do not store the tapes in direct sunlight or near equipment that generates heat. Keep the tapes away from any magnetic fields.
- Do not touch the tape surface and store the tapes in their cases after use. Dust can cause contamination of the heads resulting in noise.

■ CLEANING THE HEAD SECTION

Clean the head section about every 10 hours of use using the commercially available head cleaning tape.

- For better recordings, you should clean the head section before every recording.
- After cleaning the head section, do not load a tape until the cleared section is completely dry.

■ DEMAGNETIZING THE HEAD

Demagnetize the recording/playback head about every 10 hours of use using a commercially avaiable demagnetizer so that the magnetized head may not cause the sound to be deteriorated.

Troubleshooting Guide

If your unit should not perform as expected, consult the table below to see if the problem can be corrected before seeking help from your dealer or our service organization.

PROBLEM	POSSIBLE CAUSE	REMEDY
No power	· The AC input cord is disconnected. · The POWER button is not pressed completely.	· Connect the cord securely. · Press the POWER button to ON.
No sound	· Unrecorded tape is loaded. · Incorrect connections. · Incorrect operation of the amplifier	· Load the recorded tape. · Make connections correctly. · Operate the amplifier correctly.
Distorted or abnormal sound	· Dirty head. · Incorrect selection of the Dolby NR system. · The tape is stretched or wrinkled.	· Clean the head. · Select the corresponding Dolby NR system or OFF. · Replace the tape.
Vibrating sound	· Dirty capstans or pinch rollers. · The tape is irregularly wound.	· Clean the capstans or pinch rollers. · Wind the tape by advancing or rewinding rapidly.
Too noisy	· Magnetized head. · Poor connections.	· Demagnetize the head. · Check the connections and connect all cords securely.
No recording	· The tabs have been removed. · The RECORDING LEVEL control is set to "0". · Dirty head.	· Cover with the adhesive tape. · Set the RECORDING LEVEL control properly. · Clean the head.

Specifications

ENGLISH

Type ····· Stereo full logic cassette deck with Dolby B and C NR system.
Track System ····· 4-track, 2-channel stereo
Recording System ····· AC bias system (bias frequency : 85 kHz)
Erasing System ····· AC system
Tape Speed ····· 4.76 cm/sec (1-7/8 ips)
Heads ····· 1 erasing head and 1 recording /playback head (rotating)
Motors ····· 1 DC servo capstan motor and 1 DC reel motor
Wow and Flutter ····· 0.08% WRMS (JIS)
Fast Winding Time ····· approx. 110 seconds with C-60 tape.
Frequency Response (-20dB, recording/playback, Dolby NR OFF)
- Normal tape ····· 20~16,500 Hz
- Chrome tape ····· 20~17,500 Hz
- Metal tape ····· 20~18,500 Hz

Signal To Noise Ratio (W. CCIR/ARM)
- Dolby NR OFF (NOR./CrO_2/MET. tape) ····· More than 54/55/56 dB
- Dolby B (NOR./CrO_2/MET. tape) ····· More than 63/64/65 dB
- Dolby C (NOR./CrO_2/MET. tape) ····· More than 72/73/74 dB

Line Input Sensitivity/Impedance ····· 95 mV/47 kohms
Line Output Level/Impednace ····· 500 mV/560 ohms
THD(at 333Hz, 0dB REC.) ····· No more than 1% (Normal Tape)
Channel Separation ····· More than 40 dB

■ GENERAL

Power Requirement ····· See type plate at the rear of the unit
Power Consumption ····· 120 Watts
Dimensions (W ×H × D) ····· 440 ×100 ×330 mm (17-1/3 × 3-15/16 × 13 inches)
Weight (Net) ····· 6.3 kg (13.9 lbs)

Note: Specifications and design subject to change without notice for improvements.

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